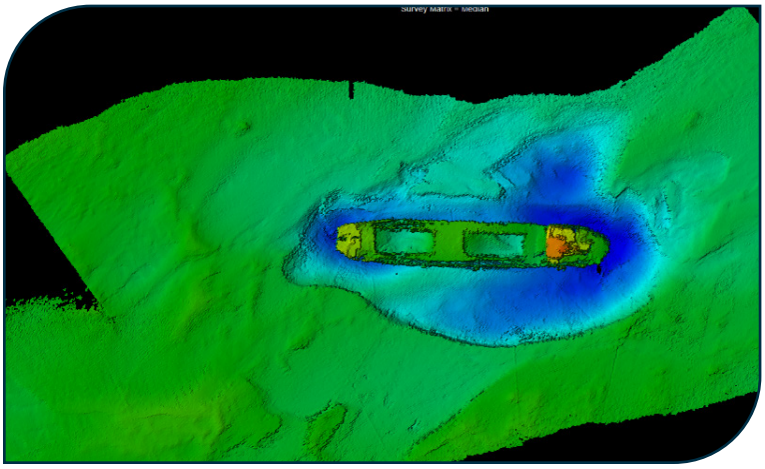
Article Written by: Joshua Sampey, HYPACK Technical Support

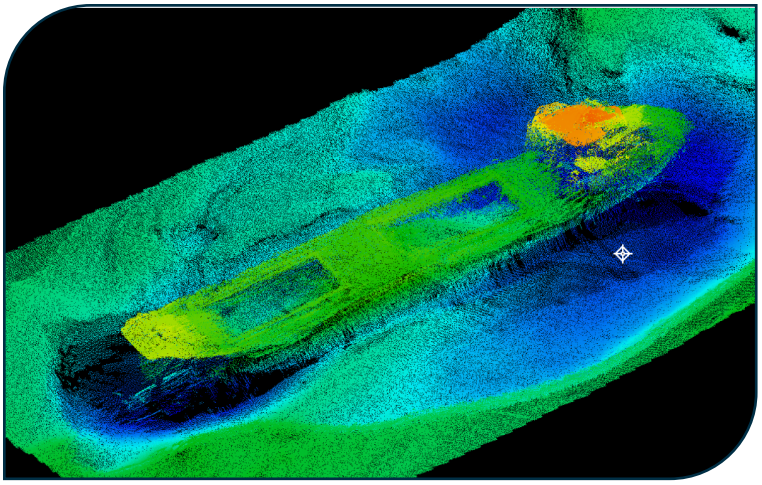
Advanced Hydrographic Training with HYPACK at Chittagong Port Authority

HYPACK recently delivered a comprehensive hydrographic training program for the Chittagong Port Authority (CPA) in Chittagong, Bangladesh. Situated along the Karnaphuli River, CPA supports approximately 70% of the country's maritime trade, requiring precise and reliable hydrographic data to maintain navigational safety and operational efficiency.

CPA operates a modern hydrographic survey fleet that includes NORBIT multibeam echo sounders, Reson system, single beam echo sounders, and side scan sonar. HYPACK® software is used as the core platform for data acquisition, processing, and analysis across these systems to support port maintenance, channel monitoring, and dredging verification.

The training focused on end-to-end hydrographic workflows within HYPACK®, with particular emphasis on multibeam data acquisition, calibration, and post-processing. Participants conducted real-time acquisition using a hull-mounted NORBIT WBMS system integrated into a CPA survey vessel. Data acquisition was performed without RTK corrections, utilizing autonomous GNSS positioning combined with tidal corrections derived from nearby gauge data. Despite these constraints, survey results demonstrated strong positional repeatability and consistency across multiple passes.

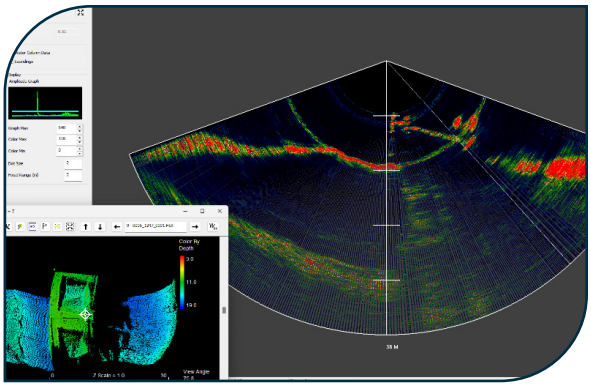




A detailed patch test was conducted to evaluate system alignment parameters, yielding high-quality results and confirming the accuracy of the sensor configuration. To further validate positioning performance, the dataset was post-processed using Applanix POSPac with RTX corrections. The resulting solution closely matched the original acquisition data, highlighting the robustness of the system configuration and the capability of modern hydrographic sensors to produce reliable datasets even in the absence of RTK.

In addition to multibeam workflows, the training covered advanced side scan sonar processing, including data cleaning, feature identification, and mosaic generation for enhanced seabed interpretation. Participants also explored HYPACK's dredging and volume computation tools, applying TIN surface modeling and cross-sectional analysis methods to calculate material volumes and support dredging verification workflows within the port environment.

An additional component of the training included exploration of water column data over a known wreck site within the river. This exercise provided insight into advanced data interpretation techniques and demonstrated the capability of multibeam systems to capture and visualize subsurface features beyond traditional bathymetric surfaces.



Through hands-on exercises and real-world data acquisition, CPA personnel reinforced their ability to execute high-resolution hydrographic surveys, process complex datasets, and generate accurate deliverables aligned with operational requirements. The training emphasized data quality control, repeatability, and efficient workflow integration across multiple sensor types.

The Chittagong Port Authority team demonstrated strong technical aptitude and engagement throughout the program, further enhancing their capabilities in maintaining safe navigation channels and supporting critical port operations. HYPACK looks forward to continuing collaboration with CPA to advance hydrographic best practices and support long-term operational success.

HYPACK, a Xylem brand
56 Bradley Street
Middletown, CT 06457, USA

+1.860.635.1500
sales@hypack.com
hypack.com